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Intelligence Memorandum

Road Construction And Repair In The Laotian Panhandle

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April 1970

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
April 1970

INTELLIGENCE MEMORANDUM

Road Construction And Repair
In The Laotian Panhandle

Introduction

The so-called "Ho Chi Minh Trail" through the Laotian Panhandle was severely damaged by rains and bombing during the 1969 monsoon season (June through September). As the weather improved, repairs were quickly made and work was begun on a number of new roads, and by November the logistical network in the Panhandle was again fully operational. This memorandum details the new construction work on roads, waterways, and pipelines during the current dry season and speculates on the implication of current construction activities.

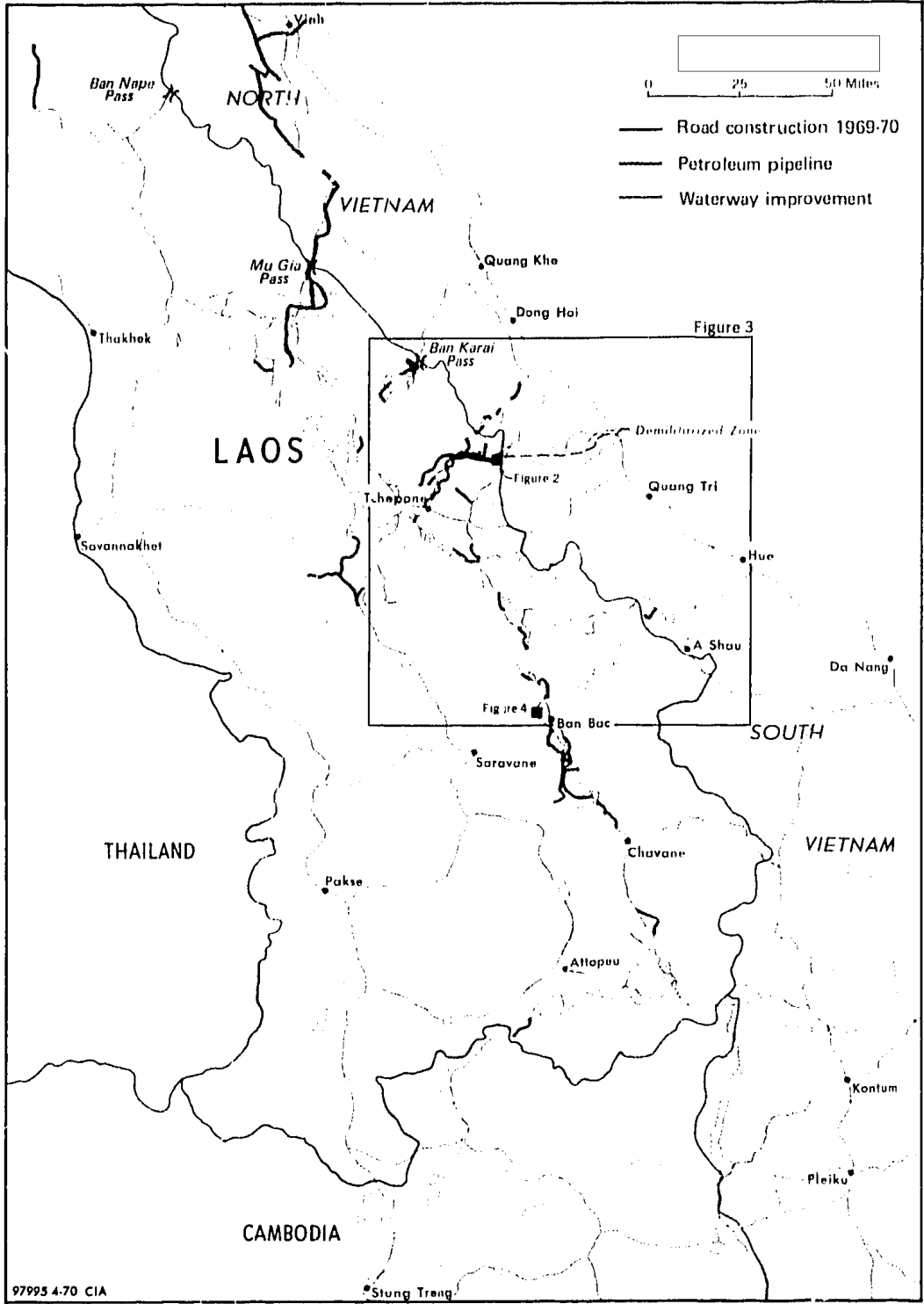
Road Construction Trends

1. The weather cycle in Laos largely determines the road construction season for Communist forces in the Panhandle. During the dry season (October through May), new roads are built and repairs and improvements are made to the existing roadnet. During the rainy season (June through September), efforts are concentrated on keeping selected routes open to traffic (see the map, Figure 1). Thus far in the current (1969-70) dry season, the North Vietnamese have built about 180 miles of new roads and will probably complete an additional 100 miles or more

Note: This memorandum was produced solely by CIA. It was prepared by the Office of Economic Research and was coordinated with the Office of Current Intelligence and the Director's Special Assistant for Vietnamese Affairs.

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Figure 1



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of new construction by June. The following tabulation shows the pace of road construction since June 1965.

<u>Period</u>	<u>Statute Miles</u>
Prior to June 1965	300
October 1965 - May 1966	363
October 1966 - May 1967	118
October 1967 - May 1968	280
October 1968 - May 1969	317
October 1969 - February 1970	178 <u>a/</u>

a. Preliminary data.

Collapse of the Laotian Roadnet

2. During the 1969 rainy season, little effort was made to keep open most of the main routes in the Panhandle. Substantial numbers of maintenance and support personnel were withdrawn prior to the onset of the heavy rains, and most roads were allowed to deteriorate from the cumulative effects of the rains and bombing. The only roads worked on throughout the rainy season were in the logistical corridor from Tchepone to storage areas along Route 922. These roads were kept open to limited traffic during most of the rainy season despite the weather and bombing attacks.

3. Roads entering Laos through the Mu Gia and Ban Karai Passes were impassable for about ten weeks during the rainy season, and the main arteries from these passes were closed as far south as Tchepone from July to late September. Roads south of Route 922 were abandoned early in the rainy season, and sections of Routes 92 and 96 near Ban Bac were nearly obliterated by landslides caused by bombing and the rains (see Figure 2). Some roads around Chavane were open for short periods, but Routes 165 and 966 running east from Chavane into South Vietnam were closed. Further south in the Panhandle and in the tri-border area no attempt was made to maintain roads, and damage by rains and bombing curtailed their use throughout most of the season.



Figure 2. A section of Route 924 about 10 miles northwest of Ban Bac showing the effects of bombing and heavy rains.

Recovery Operations

4. Restoration work in the Panhandle got under way as soon as local weather conditions improved with the southward shift of the monsoons. Despite extensive damage, the roadnet was opened from the Mu Gia and Ban Karai Passes as far south as Route 9 by late October. Most of the remaining roads were reopened by late November. Initial restoration work was more complete than in earlier years. In the past, work was first concentrated on opening main routes before repairing bypasses and other roads in the network. With the beginning of the current dry season, however, repair work was carried on concurrently on main roads, bypasses, alternates, and spur roads.

New Construction During the 1969-70 Dry Season

5. Thus far in the dry season, new road construction has been devoted largely to building additional cross-border routes into Laos from North Vietnam and to constructing long bypasses to the main north-south arteries. The quality of the new road work has been good. Alignments and grades are generally better than those of roads built in previous years, and terrain has been chosen that should cause fewer maintenance problems, especially during the rainy season. The speed of the work in widely separated areas indicates that a considerable quantity of construction equipment is being used.

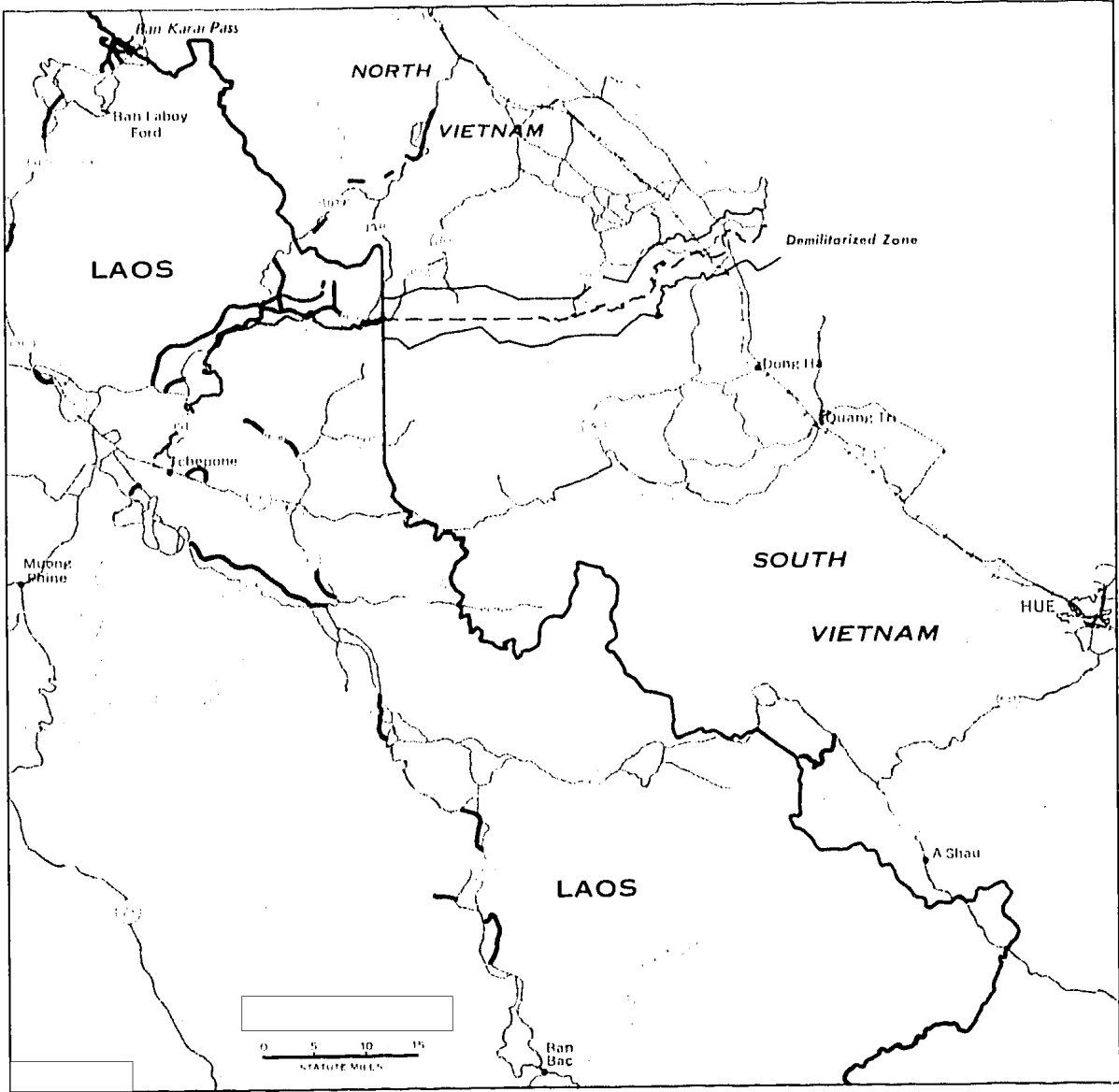
New Construction near the DMZ

6. At the end of the rainy season, construction work was resumed on Route 1039 west of the DMZ (see the map, Figure 3). This route, which earlier had been completed just across the Laotian border, was extended to Route 913 by October 1969. Later in the year, work was begun on a ten-mile bypass through high terrain around a section of Route 1039 that follows stream beds and is most vulnerable to rain and bomb damage. As late as February 1970, photography showed that improvements were still being made to Route 1039 with the use of corduroy material and gravel.

7. Early in 1970 a new cross-border road from the DMZ was added. The new road, Route 92A, was

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Figure 3



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quickly constructed along trails running west to Route 1039 from the terminus of North Vietnamese Route 1032 in the DMZ. Most of Route 92A is built in high terrain just north of the Se Bang Hiang River valley and should be a limited all-weather route. Alternate roads also are being built which will connect other parts of the Lactian roadnet with the junction of Routes 1039 and 92A. One road under construction, Route 92B, will allow traffic on Routes 1039/913 to avoid the Tchepone area. Another road is being built southwest from the road junction of Routes 1039 and 92A which will serve as an alternate for part of Route 913.

Improvements at Ban Karai Pass

8. During January 1970, construction was started on two cross-border alternates for Route 912 through Ban Karai Pass. These new roads will connect with the long bypasses west of Ban Laboy Ford, where additional fording sites are being constructed. At the southern end of Route 912, a new road connection with Route 911 is being constructed to provide another alternate for that heavily bombed road junction area. Short alternate roads are also being built parallel to this end of Route 912 to increase the road's flexibility.

Construction South of Route 9

9. The Communists are greatly expanding and diversifying the north-south roadnet south of Route 9. Parallel roads are being added by constructing a series of long bypasses that connect with each other and with the existing road, Route 92/96. By January 1970, parallel, interconnected road systems had been completed for some 110 of the 140 miles between Tchepone and Chavane, and bypasses built in early 1969 south of Chavane were being improved. Across southern Laos, the Communists have almost finished work on short road segments that interconnect with Route 110 near the Cambodian border.

Work on Lateral Routes into South Vietnam

10. The North Vietnamese restored their east-west laterals to the South Vietnamese border but have not yet improved them significantly. Routes 925 and 926 into South Vietnam were reopened in January 1970. Route 922 remained open during the rainy season, but was motorable only as far as the

South Vietnamese border; it was, however, made motorable into South Vietnam shortly after the dry season and reopened through the A Shau Valley by January 1970.

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East of Chavane, the North Vietnamese have not restored the cross-border connections between Route 966 and South Vietnam Route 14 in northern Kontum Province. Parts of Routes 96/110 that enter South Vietnam via base areas in the Cambodian salient were reportedly worked on as early as October 1969. These road segments were subsequently connected to the main north-south roadnet in December and have since seen heavy use.

Status of Other Routes

11. The enemy reopened Route 8 west of Ban Nape in January 1970. This route is used primarily to feed traffic northwest along Route 81, which was improved and extended eight miles in January 1970. West of the Ho Chi Minh Trail, the Communists have constructed additional roads near the junction of Routes 23 and 9. These additions, as well as Routes 8 and 81, apparently are used to support tactical operations against Royal Laotian troops. The roads that have been added recently are poorly constructed and will become unusable early in the rainy season.

Waterway Improvements

12. The North Vietnamese have continued to improve selected Laotian waterways that complement their road network by serving as alternate transportation routes.* The most important is the Se Bang Hiang River which flows west from the DMZ and then south to Tchepone. Segments of the river have been dredged, and in areas the river channel has been lined with bamboo booms to guide floating supplies (see Figure 4). Transshipment points also have been added along the Se Bang Hiang in recent months, and pilots have reported frequent sightings of 200 to 600 free-floating barrels and other containers on the river.

* The North Vietnamese use of waterways is not confined to the rivers mentioned in this section. These rivers are, however, the most heavily used.



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Figure 4. Free-floating supplies in the Se Bang Hiang west of the DMZ.

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13. Further south, transshipment points and channel guides have been added along the Se Kong River from Ban Bac to a point about 25 miles downstream. This section of the river serves as an alternate to Route 96, [REDACTED]

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Petroleum Pipelines

14. In Laos, west of the DMZ, a 13-mile segment of a new pipeline has been seen and identified in photography (see the map, Figure 3). Although extensions into North Vietnam cannot be observed due to heavy jungle cover and terrain, there are indications that at least part of the pipeline has been operational since October. [REDACTED]

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[REDACTED] An associated storage site with at least 25 tanks (having an estimated capacity of 250 metric tons) reportedly is planned for the Tchepone area.* Photography has confirmed the presence of some storage tanks in this area as well as possible pumping stations, spur lines, and distribution points.

15. The most likely terminal of the line in North Vietnam is the recently expanded petroleum facility at the port of Quang Khe. Short pipeline segments have been identified along Routes 1036 and 1039 in North Vietnam. Extensive quantities of pipe sections have been observed in storage areas in North Vietnam and in Laos near the junction of Routes 1039 and 913. It is unlikely that this new line will be connected to the existing pipeline which enters Laos through the Mu Gia Pass. Only a short extension of the latter pipeline has been observed during the current dry season and a nine-mile bypass line has been added in the Mu Gia Pass area.

Conclusions

16. Road construction and waterway improvements during the current dry season have again added to the flexibility and capacity of the transportation

* The petroleum consumption requirement for southern Laos is estimated at 40 metric tons per day.

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network in the Laotian Panhandle. A logistical corridor being completed through and around the western end of the DMZ could become the most important route for introducing supplies into the Panhandle, particularly during the rainy season. This corridor reduces the exposure of traffic to air attacks and offers a direct route to storage facilities in the Tchepone area. The new roads in this area are being given a limited all-weather capability and are supplemented by an improved waterway that has seen extensive use this dry season. A further indication of the importance attached to the DMZ route is the construction of a new petroleum pipeline through this area. When this line is completed, it probably will extend from a port in southern North Vietnam through the DMZ to Tchepone and on south to Route 922.

17. The North Vietnamese also are substantially improving the road network south of Tchepone. Long bypasses are being built that will interconnect with each other and with the main north-south artery, Routes 92/96. This new construction is similar to patterns of road work observed in previous years north of Tchepone. When completed, the North Vietnamese will have roughly parallel, interconnected road systems with a limited all-weather capability throughout the length of the Panhandle.